BULLETIN

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Notes on New England Marine Algae.—VI.

By Frank S. Collins.

The species mentioned in the following notes have not, as far as I know, been recorded from our coast, except that *Ralfsia pusilla* and *Desmotrichum undulatum* were mentioned in the Flora of Mount Desert by Rand & Redfield, and *Entophysalis granulosa* in my list of the algae of Atlantic City, N. J., Bulletin, December 1888. Unless otherwise noted, the specimens were collected by me.

Entophysalis granulosa Kütz. This species I have found at Cape Rosier, Maine; Mr. Isaac Holden finds it at Stratford, Conn.; and it occurs at Atlantic City, N. J.; probably it is common all along the coast. It forms a crumbly incrustation at high-water mark, and seems to prefer lagoons or high tide-pools, where the water is quite salt and where the level does not vary much. It is figured and described in Bornet & Thuret, Notes Algologiques, 1. *pl. 1. fig. 4 and 5*, and distributed in Collins, Holden & Setchell, Phyc. Bor. Am. no. 152.

Spirulina Meneghiniana Zan. Found in August, 1893, in the salt marshes at Revere, Mass., in scattered filaments among other algae in a ditch of brackish water. It has a much looser spiral than *S. subsalsa* Oersted (*S. tenuissima* of Farlow's Manual). Figured and described in Gomont, Monogr. des Oscill., 270. *pl. 7. fig. 28.*

Hydrocoleum lyngbyaceum rupestre Kütz; Gomont,

Monogr. des Oscill. 76. *pl. 12. f. 8–10.* This species was abundant at Goose Creek, Cape Rosier, Maine, in July of 1893 and of 1895, forming a rather thick, black, slimy coating on dead sticks Zostera, etc.

AMPHITHRIX JANTHINA (Mont.) Bornet & Flahault. This occurs at Rockport, Mass., on wet cliffs just above high water mark; and var. TORULOSA (Grun.) B. & F. grows in abundance in the autumn months on stones in a ditch in the salt marshes at Revere, Mass. Though described by Bornet and Flahault as a fresh-water plant, at this last station it grows in company with brackish and marine species like *Polysiphonia subtilissima* and *Ectocarpus confervoides*.

EPICLADIA FLUSTRAE Reinke, Atlas Deutscher Meeresalgen, 31. *pl. 24.* Appears to be common along the coast on Sertularia, Flustra, etc., the densely packed branching filaments forming a thin green coating on the host. Distributed in Phyc. Bor. Am., No. 160.

In Farlow's Manual of the Marine Algae of New England, Le Jolis is followed in including the species of *Enteromorpha* in the genus *Ulva*, and considering most of our forms as subspecies or varieties. Subsequent study by Agardh, Ahlner, Reinbold and others has tended to considerably change this arrangement, and it is now generally recognized that *Enteromorpha* should be considered as a distinct genus, represented by quite a number of species in this region. *E. compressa* (L.) Grev., *E. intestinalis* Link, *E. clathrata* (Roth) J. Ag., *E. Hopkirkii* Harv. and *E. ramulosa* (Engl. Bot.) Hook., which appear as synonyms in the manual, are now accepted as specific names, as is also *E. marginata* J. Ag., which was recorded in the BULLETIN for December, 1884, under the name of *Ulva marginata*. *E. micrococca* Kütz was mentioned by the writer in the BULLETIN for November, 1891, and *E. erecta* in J. Agardh, Till Alg. Syst. 3: 152.

To these can now be added the following:

E. PROLIFERA (Fl. Dan.) J. Ag., a species resembling in habit *E. compressa*, from which it is distinguished by having the cells arranged in longitudinal series almost throughout. It appears to be common all along the coast.

E. CRINITA (Roth) J. Ag. This species resembles *E. clathrata*

in ramification, but the cells are not arranged in a netlike manner, resembling rather those of *E. compressa*, from which it is distinguished by the uniform arrangement of the cells in longitudinal series. The ramuli often terminate in a single row of cells, which is, however, much shorter and less characteristic than in *E. Hopkirkii*. It appears to be not uncommon.

E. TORTA (Mert.) Reinbold. In this species the fronds are very slender, from two to eight cells in breadth, the cells always in longitudinal series and usually in cross rows; the branches are only one or two cells broad, resembling the filaments of *Tetranema percursum*, but without the exactly symmetrical arrangement of cells in the latter. I found it at Eagle Island, Penobscot Bay, Maine, in July, 1894, growing in company with other *Enteromorphas*, *Cladophora expansa*, *Lyngbya aestuarii*, etc., in a lagoon reached by only the highest tide, and the water of which often became by continued evaporation, salter than the ocean.

At this same locality I found, in July 1893, a plant in regard to which I have been in some doubt, but I venture to describe it as

E. CRUCIATA n. sp.

Fronds branching, mostly of a single series of cells, but at the point of branching of two series or sometimes more; branches issuing at right angles or nearly so, usually opposite, but sometimes alternate or secund, simple, usually short, tapering; monosiphonous filaments usually 20–30 μ. diam.; cells about as long as broad, cell wall very thick; in the irregular cellular masses where several branches issue near together, the cells are rounded, up to 50 μ diam.

The general appearance of the fronds is somewhat like that of *Rhizoclonium*, and the shorter branches somewhat resemble those of the latter genus; but the branches are much more numerous and longer; they are mostly opposite, but sometimes issue two or three on the same side of the main filiment. Younger parts bright green, older nearly colorless. Found unattached, among floating masses of *Cladophora*, *Enteromorpha* and *Lyngbya* in warm shallow water of lagoon, Eagle Island, Maine, July, 1893.

STREBLONEMA FASCICULATUM Thuret. *S. volubilis* Pringsheim, Beiträge zur Morphologie der Meeresalgen, *pl. III., B.* Growing in the fronds of *Castagnea virescens*, Spectacle Island, Penobscot

Bay, Maine. Distinguished by the relatively large, branching plurilocular sporangia.

ECTOCARPUS AECIDIOIDES Rosenvinge, Gronlands Havalger, 894. *fig. 27.* A minute species, forming spots barely visible to naked eye, on old fronds of *Laminaria* species. The vegetative filaments grow in the interior of the frond of the host plant; when fruiting, the sori are formed directly under the epidermis, which is pushed upward and finally ruptured. Found at York Island, near Isle au Haut, Maine, July, 1894.

DESMOTRICHUM UNDULATUM (J. Ag.) Reinke, Atlas, 15. *pl. 11.* Resembles a small *Punctaria*, and grows commonly on *Zostera marina* in quiet bays. The *Punctaria latifolia* var. *Zosterae*, of Farlow's Manual, is probably in part identical with this species. I have found it on the coasts of Maine and Massachusetts, and Mr. Holden finds it at Bridgeport, Conn. Specimens from the latter locality are distributed in Phyc. Bor. Am. no. 129. In company with this species we generally find more or less of the following:

D. BALTICUM Kütz. A much slenderer species, mostly of a single series of cells, ending in a long, colorless hair. See Reinke, Atlas, 15. *pl. 12.* The limits of species are very difficult to define in this and the related genera, and it would not be difficult to arrange an uninterrupted series of specimens from the fine, Ectocarpus-like *D. scopulorum* to the coarse, leathery *Punctaria plantaginea.*

RALFSIA PUSILLA (Strömf.) Holmes & Batters (*Stragularia pusilla* Strömfelt, Notarisia, 3: 382. *pl. 3. f. 4.* 1888). The smallest species of the genus and of quite different habitat from the others, which grow on rocks and woodwork, while this is epiphytic. The original description gives it as occurring on *Laminaria;* on the New England coast I have found it from Marblehead to Mount Desert, growing on *Chaetomorpha aerea* and *C. Melagonium*, forming thin, black "collars" around one or more cells in the upper part of a filament.

SCYTOSIPHON LOMENTARIUS COMPLANATUS Rosenvinge, Gronl. Hav. 863.

This variety, described from Greenland specimens, has been found by Mr. Holden growing abundantly and luxuriantly at Bridgeport, Conn. It is a spring plant, disappearing in early

summer; it differs from the type by the flattened, not constricted frond, and by the lack of paraphyses when in fruit. Distributed in Phyc. Bor. Am. no. 173.

FUCUS ARESCHOUGII Kjellman, Handbok i Skandinaviens Hafsalgflora, 1 : 11.

A northern form, growing on exposed rocky shores near high-water mark. It resembles some forms of *F. vesiculosus* that grow in similar localities, but is distinguished by the hermaphrodite conceptacles. The narrow, closely and regularly forked fronds with the ultimate segments at nearly uniform height, and ending in small spherical or ovate receptacles, distinguish it from *F. edentatus* and *F. evanescens*, both of which, moreover, grow near low-water mark. It approaches nearer to *F. platycarpus*, and the receptacles are often margined as in the latter; there may be intermediate forms, but the types seem distinct, *F. platycarpus* being a larger plant with broader frond, and having the fruiting segments lateral. *F. Areschougii* occurs from Marblehead northward, and is very common on the coast of Maine.

CHANTRANSIA CORYMBIFERA Thuret.

This interesting species, the only one of the genus in which occurs a true sexual reproduction by means of antheridia, trichogynes and carpospores, was collected for the first time in America by Mr. George Waterman, in August 1893, at Marblehead, Mass. It has since been found at Wood's Hole, Mass., by Mr. C. P. Nott, and specimens from the latter locality are distributed in Phyc. Bor. Am. no. 192. In both localities it grew on *Ceramium rubrum* and *Cystoclonium purpurascens*. Figured and described in Bornet & Thuret, Notes Algologiques, 16. *pl. 5*.

PEYSSONELLIA ROSENVINGII Schmitz, in Rosenvinge, Gronl. Hav. 782. *f. 8*. A specimen which I found at Spectacle Island, July, 1894, is identified by Rosenvinge with this species. It grew on a mussel shell, and I have found the same species on several occasions growing on the shells of live crabs. In every case it grew, not directly on the crab or mussel shell, but on a *Lithothamnion*, which Rosenvinge identifies with *L. circumscriptum* Strömf. Whether the *P. Dubyi* of Farlow's Manual is the same as this, or whether we have two species, I cannot say; as far as I

know there have been only sterile plants observed here, probably because the plants fruit in winter.

HALOSACCION SCOPULA Strömfelt, Meeresalgen Islands, 173; Om Algvegetationen vid. Islands Kuster, 29. *pl. 1, f. 16; pl. 2. f. 1.* A form agreeing very well with Strömfelt's description and figure was found by me at York Island, Maine, July, 1894. In view of the great range of variation in *Halosaccion ramentaceum*, it is doubtful if this can be given higher rank than that of a variety.

In my notes on N. E. Marine Algae, V., in the BULLETIN for November, 1891, I mentioned *Calothrix Contarenii* as found at Revere Beach, Mass. Dr. Bornet informs me that the specimens from this locality were wrongly determined, and are nearer to *C. fasciculata*, the difference from the type of the latter being chiefly a matter of dimensions.

Nitella subspicata sp. nov.

BY T. F. ALLEN.

(PLATE 253.)

Nitella monarthrodactyla, furcata, homoeophylla, monoica, gymnocarpa, acuminata.

Plants from fifteen to twenty centimetres high, diffusely branched; leaves acuminate, those of sterile verticils, spreading, diffuse, of the fertile verticils contracted, forming somewhat dense heads (remotely spike-like). Fertile verticils arise from within the verticil of the sterile leaves on peduncles which are sometimes very short and sometimes elongated. The leaves are once divided; terminal segments (3 or 4) one-celled, long-acuminate, somewhat inflated at the middle. Antheridia 240 in diameter. Sporophydia one to three at a node of the leaf (usually two), 306 long from base to tip of coronula. Nucleus 225 long, 200 broad, with six prominent acute ridges, nearly black. Membrane of the spore quite smooth.

Measurements: stem diameter 780 to 830, leaf diameter 488, 500 to 610; terminals diam., 400, 464 and 490.

Collected in Missouri by J. W. Blankinship.

This plant is nearly related to *Nitella subglomerata* A. Br., from which it differs by its more contracted "heads;" its smaller antheridia and oöspores, as well as by the perfectly smooth

spore-membrane, by which it is also distinguished from the other species of the *acuminata* group. These specimens show a variation in the character of the leaves of a verticil; they are frequently dimorphous, but never heterophyllous as in *N. clavata* A. Br. of the Pacific coast.

A similar heteromorphous character of the leaves (some simple and sterile, others branched and fertile) may also be found in *Nitella Blankinshipii* (found in the same region), and it has seemed possible that some transitional forms leading toward *N. clavata* A. Br. would be found, especially as in both of these species we find a tendency to an inflation of the terminals so commonly a character of *clavata*. But the difference between *heteromorpha* and true *heterophylla* is constant and fundamental in the development of the nodal cells, rather than accidental and variable.

Explanation of Plate 253.

Fig. 1, plant natural size; fig. 3, stem verticil and leaf ×25; figs. 3 and 4, leaf nodes with terminals ×25, fig. 5, nature spore ×50.

Contributions to the Lichens of Maine.—II.

By F. L. Harvey.

The following list embraces lichens collected last August in the vicinity of Jackman and about Orono by the writer; about Bangor by Mr. O. W. Knight; at N. Lubec and in Aroostook Co., by Miss Cummings and Miss Teller. Miss Cummings' specimens were principally from the head waters of the St. John and were distributed in "Decades of N. A. Lichens." The Jackman specimens were from the headwaters of Penobscot, Kennebec and De Loup rivers. Sandy Bay Mt. mentioned in the list is 12 miles northeast from Jackman and on the Canadian boundary. The numbers above 115 are accessions to the State flora. Those below 115 refer to new localities for species mentioned in a previous list (Bulletin, September, 1894. 389). We are under obligation to Miss Cummings for the examination of specimens.

Fam. USNEEI.

116. CETRARIA JUNIPERINA PINASTRI Ach.

On coniferous trees and rail fences, St. Francis, Aroostook Co., no. 94 (Cummings & Teller); Jackman and Orono (Harvey).

7. *C. ciliaris* Ach. On rail fences, Jackman (Harvey).

8. *C. lacunosa* Ach. On spruce trees; very finely developed; Bangor (O. W. Knight); Orono (Harvey).

15. *Usnea barbata plicata* Fr. Jackman (Harvey).

16. *U. longissima* Ach. On spruce trees, Jackman (Harvey).

17. *Alectoria jubata calybeiformis* Ach. Common, Jackman (Harvey).

Fam. PARMELIEI.

19. *Theloschistes concolor* (Dicks.). On apple trees, St. Francis, Aroostook Co., no. 99 (Miss Cummings); Orono (Harvey); Bangor (O. W. Knight).

117. T. LYCHNEUS (Nyl.). On maple bark. Orono; (Harvey.)

21. *Parmelia tiliacea* (Hoffm.) Floerk. On various trees; St. Francis, Aroostook Co., no. 102 (Cummings & Teller); Jackman (Harvey).

23. *P. physodes* (L.) Ach. Jackman; (Harvey). Our specimens are like 9b in Dec. N. A. L. (Cummings).

118. P. PHYSODES OBSCURATA Ach. Orono (Harvey).

119. P. OLIVACEA (L.) Ach. On cherry trees, St. Francis Aroostook Co., 105 (Cummings & Teller); Orono (Harvey).

120. P. AMBIGUA (Wulf.) Ach. Dead and charred logs, St. Francis, 108 (Cummings & Teller).

121. P. AMBIGUA ALBESCENS Wahl. With the above, 109 (Cummings & Teller).

32. *Physcia speciosa* (Wulf.) Nyl. On various trees, Glacial Lake, Aroostook Co., 110 (Cummings & Teller).

122. P. HYPOLEUCA (Muhl.) Tuck. On Trees, Jackman (Harvey).

33. *P. stellaris* (L.). Orono (Harvey).

Fam. PELTIGERI.

123. PYXINE SOREDIATA Fr. Specimens from Jackman seem to be this (Harvey).

42. *Sticta amplissima* (Scop.) Mass. Rocks and trees, Jackman (Harvey).

44. *S. pulmonaria* (L.) Ach. On trees, Jackman (Harvey).

124. NEPHROMA ARCTICUM (L.) Fr. On rocks; abundant; summit of Sandy Bay Mt., near Jackman (Harvey).

49. *Peltigera aphthosa* (L.) Hoffm. On earth and decaying logs; Ft. Fairfield, no. 160 (Cummings & Teller).

P. polydactyla (Neck.) Hoffm. Jackman (Harvey).

125. P. CANINA SPONGIOSA Tuck. Mossy logs, St. Francis, no. 118 (Cummings & Teller).

126. P. CANINA SOREDIATA Scheer, Ach. On earth, St. Francis, no. 119 (Cummings & Teller).

127. P. CANINA SPURIA Ach. Earth, St. Francis, 119 (Cummings & Teller).

Fam. COLLEMEI.

128. LEPTOGIUM TENUISSIMUM (Dicks.) Koerb. On earth and moss, Van Buren, 125a (Cummings & Teller).

129. PLACODIUM AURANTIACUM (Light.) Naeg. & Hepp, Orono (Harvey).

Fam. LECANOREI.

130. LECANORA SUBFUSCA (L.) Ach. Orono (Harvey).

131. L HAGENI Ach. On logs in railroad embankment, Fort Fairfield, 132 (Cummings & Teller).

67. *L. varia* (Ehrh.) Nyl. Orono (Harvey).

132. L. VARIA SYMMICTA Ach. Rail fences; Van Buren, 167 (Cummings & Teller).

71. *Pertusaria multipunctata* (Turn.) Nyl. Maple trees; Mar's Hill, 135 (Cummings & Teller); Orono (Harvey).

72. *P. communis* DC. Rail fences, N. Lubec, 136 (Cummings & Teller).

133. P. LEIOPLACA (Ach.) Schaer. Rail fences, Van Buren, 137 (Cummings & Teller).

Fam. CLADONIEI.

76. *Sterocaulon paschale* (L.) Fr. Jackman (Harvey).

79. *Cladonia pyxidata* (L.) Fr. Rotten wood and earth, Alla-

quash Plantation, Aroostook Co., 139 (Cummings & Teller); Jackman (Harvey).

134. C. FIMBRIATA TUBAEFORMIS Fr. (Ground). Sandy Bay Mt. near Jackman (Harvey).

81. *C. gracilis verticillata* Fr. Jackman (Harvey); Bangor (O. W. Knight).

83. *C. gracilis hybrida* Schaer. Jackman (Harvey); Bangor (Knight).

84. *C. gracilis elongata* Fr. Earth, Sandy Bay near Jackman (Harvey).

86. *C. squamosa* Hoffm. Jackman (Harvey); Orono (Harvey); Bangor (Knight).

88. *C. furcata crispata* Fr. Jackman (Harvey).

135. C. FURCATA RACEMOSA Fl. In moss on rocks, head of Pamedomcook Lake, Falls of Tumble-down-Dick stream (Harvey); Bangor (O. W. Knight).

90. *C. rangiferina* (L.) Hoffm. Jackman (Harvey).

91. *C. rangiferina sylvatica* L. Jackman (Harvey).

93. *C. amaurocrea* (Fl.) Schaer. Jackman (Harvey).

94. *C. uncialis* (L.) Fr. Orono (Harvey).

136. C. DEFORMIS (L.) Hoffm. On earth and logs, St. Francis 141 (Cummings & Teller); Jackman (Harvey).

137. C. DIGITALA (L.) Hoffm. Rotten wood and earth, St. Francis 142 (Cummings & Teller).

100. *C. cristatella* Tuck. Earth, Sandy Bay Mt. (Harvey); Bangor (O. W. Knight).

Fam. LECIDEEI.

138. BAEOMYCES BYSSOIDES (L.) Schaer. Sandy banks, St. Francis, 144 (Cummings & Teller).

139. BIATORA GRANULOSA (Ehrh.). Bank, St. Francis, Tp. 18, R 10, Aroostook Co., 145 (Cummings & Teller).

140. B. MILLIARIA (Fr.). On wood, Orono (Harvey).

141. LECIDEA MELANCHIMA Tuck. Rail fences, N. Lubec, 146 (Cummings & Teller); Orono (Harvey).

108. *Buellia parasema* (Ach.) Th. Fr. Jackman (Harvey).

Fam. OPEGRAPHEI.

114. GRAPHIS SCRIPTA (L.) Ach. Birch bark, Jackman (Harvey).

Notes on Myriophyllum.

M. Farwellii Morong. When Dr. Morong described this species, material for a full description of the flowers was lacking, and the only known locality for the plant was in a small pond in Keweenaw county, Mich. Since then it has been collected in Wilton, and the Piscataquis River, in Maine, by M. L. Fernald, and by myself in two widely separated localities in Vermont. I first collected it in a small mountain pond in Johnson, Lamoille county, and later in a set-back of the West River at W. Townshend, Windham county. I have thus been able to collect abundant material at different stages of flowering and fruiting and to study the habit of the plant with some care. The habit of the Johnson plant is somewhat different from that of typical *M. Farwellii*; I have never found it rooting, but floating near the surface in large quantities, sometimes sinking to the bottom when heavily fruited. It blossoms in June and early July, and matures fruit in July and early August. Its fruit is almost precisely like that of the type in every particular.

The Townshend plant has the same rooting habit and the same peculiarities of submerged growth and fruiting as the type, but its fruit is larger, darker and matures a month later, in early September. The ridges of tubercules run more irregularly and the tubercules themselves are much larger than those of the type. The lower tubercules take the form of short, hooked spines.

Of the flowers Dr. Morong said: *"Judging from specimens furnished it is dioecious, as I can find only pistillate flowers. Petals four, oblong, delicate, purplish in color, including four abortive stamens, which have silk-like filaments and minute, undeveloped anthers." The flowers were alike in both forms of my collecting, perfect; petals four, oblong, purplish; stamens four, a little shorter than the petals; filaments glabrous, somewhat longer than the short oblong anthers; stigmas plumose, sub-sessile. I have not examined the very earliest flowers, but the later ones were all perfect. As in other species, the upper portion of a stem will often be in flower while the lower portion bears mature fruit.

* Bull. Torr. Bot. Club, 18: 146.

In each case the plant grew in shallow, quiet water with a muddy bottom. I believe this plant will be found all along the northeastern border of the United States and in Canada, and I would suggest that collectors be on the lookout for it.

It is strange that none of the works on North American Botany mention the two bractlets at the base of the flowers in all species of *Myriophyllum*. So far as I know, Engler and Prantl in Natürlichen Pflanzen Familien and Martius in Flora Brasiliensis are the only ones mentioning these bractlets. I first found them in *Myriophyllum Farwellii*, where they are small, lanceolate and hyaline, as also in *M. tenellum* Big., *M. hippuroides* Nutt., *M. pinnatum* (Walt.), *M. Mexicanum* Watson, *M. laxum* Shutt. They are ovate and very large and conspicuous in *M. spicatum*, being two-thirds the size of the bracts and as firm in texture. In *M. alterniflorum* D.C. they are smaller than in *M. spicatum*, but similar in texture and shape. In *M. verticillatum* L. they are quite conspicuous, ovate and hyaline. In *M. heterophyllum* Michx., ovate, serrate and hyaline. In *M. humile* (Raf.), minute, oblong-ovate and membranous.

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A Note on Jungermannia Marchica Nees.

By Alexander W. Evans.

(Plates 254, 255.)

The hepatic before us is a most clearly marked species of Dumortier's subgenus *Lophozia;* but, probably on account of its extreme rarity, it remained for a long time strangely overlooked or misunderstood by both European and American botanists. During the forty years which followed Nees von Esenbeck's publication of the plant, *Jungermannia Marchica*, as a distinct species, quite disappeared from German literature. In the Synopsis Hepaticarum the only allusion to it is a brief description under Nees' first name, *J. socia, var. obtusa;* and even the type specimen, as Herr Stephani has recently determined, is labeled in the same way. Apparently nothing further was seen of the species in Ger-

many until the beginning of the last decade, when it was rediscovered by Herr Warnstorf near Neuruppin. His specimens were sent for examination to Herr Limpricht, who referred them correctly to *J. Marchica* and published a full and accurate description of the species.* The plant was found last summer by Herr Löske of Berlin and the writer, in the Grunewald near that city, and it has also been reported from Scandinavia.†

Meanwhile, in the United States, Austin found the species, determined it as *J. polita* Nees, and distributed it under this name as No. 46 of his Hepaticae Boreali-Americanae. It here came before the attention of Lindberg, who recognized it as distinct from *J. polita* and described it as *Jungermannia laxa* n. sp. But he soon suspected its identity with *J. Marchica;* for, in 1879,‡ he gives the latter as a possible synonym of *J. laxa*, and, in 1886,§ he states positively that they are the same plant. Quite recently the species has been rediscovered in this country by Mr. Rand.‖

The following description is drawn largely from the Grunewald specimens, which closely agree with those of Austin's distribution, and also, as Herr Stephani kindly informs me, with the type in the Nees herbarium:

JUNGERMANNIA MARCHICA Nees, Naturgesch. der europäisch. Lebermoose, 2: 77. 1836.

J. socia Nees, var. *obtusa* Nees, l. c. 2: 72. 1836.

J. polita Aust. Proc. Phil. Acad. 1869: 220. [not Nees.]

J. laxa Lindb. Acta Soc. Sci. Fenn. 10: 529. 1875.

Dioicous, creeping among *Sphagna* or loosely caespitose, pale green, becoming bleached or brownish with age; stems prostrate or ascending, thick and wiry, mostly simple, varying in color from pale green through reddish-brown to deep purplish-black, and bearing scattered rhizoids, which exhibit the same variations in color; leaves of the sterile stems and of the fertile stems in the lower part distant, obliquely inserted, not decurrent, broadly quad-

* Eine verschollene Jungermannia. Flora, 65: 45. 1882.

† Arnell, H. W. Bot. Notiser, 1894 : 49. Several facts regarding the history and synonymy of the species are also given here.

‡ Musci Scand. 7 1879. [Footnote.]

§ Meddel. Soc. F. et Fl. Fenn. 13: 233. 1886.

‖ Flora of Mt. Desert Island, Maine. 224. 1894.

rate, 2 to 4-lobed to about the middle, the sinuses usually obtuse or rounded, the lobes mostly plane but occasionally somewhat convex, broadly ovate, with rounded apex and entire margins; underleaves very rarely present, similar to the leaves but smaller; leaves of the fertile stems in the upper part contiguous, sometimes decurrent, the lobes becoming strikingly convex, crispate and irregularly sinuous or dentate; perichaetial bracts two pairs, similar in size and form to the upper stem-leaves but more incised and subdivided; inner bracteole free, usually 2-lobed, of the same character as the bracts; second bracteole (when present) similar to the inner one, but usually a little smaller and frequently bearing on its surface 1 or more ligulate appendages, a cluster of which, in some cases, entirely replaces the leafy expansion of the bracteole; perianth ovate-cylindrical, exserted, terete except in the upper third, where it is very obtusely keeled, the mouth somewhat contracted, minutely denticulate; perigonial bracts in about 5 pairs, imbricated, complicate, 2 or 3-lobed, similar to the leaves when explanate.

Stems up to 2.5 cm. long, 0.50 mm. in diameter; leaves averaging 1 mm. in length and 1.25 mm. in width; perichaetial bracts 1.–1.25 mm. long by 2.–2.5 mm. wide; perianth 3 mm. long, 1 mm. in diameter; perigonial bracts 1.50 mm. long by 1.75 mm. wide; leaf-cells thin-walled, polygonal, in the middle of the leaf 0.044–0.064 mm. in diameter.

Near Closter, New Jersey (Austin): Beach Mountain, Mount Desert Island, Maine (Rand).

The plant is apparently as rare with us as it is in Europe, but it is undoubtedly often passed by. The wiry stems wind in and out among the branches of a sphagnum tuft and are completely hidden from sight, while the pale leaves are scarcely to be distinguished by their color from the sphagnum leaves among which they grow. When we pull the tuft apart, the deep purplish color of the stems becomes apparent and at once distinguishes the plant from its allies. The stem is pentagonal in section and is bounded by an epidermoidal layer of cells with thickened walls; on the postical aspect, the pigmentation is especially well marked and affects the walls of these cells, the rhizoids springing from them, and, to a less degree, the two or three layers of cells just within them;

the other internal cells of the stem have thin and colorless walls. The perianth is one layer of cells in thickness down to the very base.

Jungermannia polita Nees is not a close ally of this plant, and may be at once distinguished from it by its smaller complicate leaves, the cells of which have thickened walls and well developed trigones. A rather closer relationship to *J. Marchica* may be discovered in the *J. Novae-Caesareae** of the writer,

* Bull. Torr. Bot. Club, **20**: 308. *pl. 163.* 1893.

which is found in somewhat similar localities. The last named species differs in its weaker habit, in its pale and delicate stems, in its smaller leaves with less rounded lobes and smaller cells, in its simpler bracts and single connate bracteole, and in its perianth, which is keeled to below the middle and more deeply denticulate at the mouth. The nearest European ally, *J. Mildeana* Gottsche, has not yet been reported from America.

YALE UNIVERSITY.

Description of Plates 254, 255.

Fig. 1. Plants, twice natural size.
Fig. 2. Sterile stem, postical view (× 18).
Fig. 3. Female stem, antical view (× 18).
Fig. 4. Female stem, lateral view (× 18).
Figs. 5, 6. Inner perichaetial bracts (× 22).
Fig. 7. Inner bracteole (× 22).
Figs. 8, 9. Second perichaetial bracts (× 22).
Fig. 10. Second bracteole (× 22).
Fig. 11. Transverse section of perianth in upper fourth (× 22).
Fig. 12 Male spike, antical view (× 12).
Figs. 13, 14. Perigonial bracts (× 22).
Fig. 15. Cells from middle of leaf (× 265).

New Melastomaceae collected by Miguel Bang in Bolivia.

BY A. COGNIAUX.

MICONIA GLOMERULIFERA (sect. Cremanium); ramis obtuse tetragonis, junioribus petiolis paniculis calycibus foliisque subtus ad nervos brevissime denseque stellato puberulis; foliis longe petiolatis, anguste ovatis, obtusiusculis, basi rotundatis, margine integerrimis vel vix undulato subdenticulatis et brevissime subsparseque

setuloso ciliatis, 7-nerviis, supra brevissime subsparseque setuloso-scabriusculis, subtus brevissime et densiuscule plumoso-puberulis; floribus 5-meris, sessilibus, minute glomerulatis; calyce late campanulato, breviter obtuseque 5-dentato; antheris apice biporosis.

Rami robustiusculi, juniores petioli pedunculique cinereo-fusci. Petiolus robustiusculus, 4–9 cm. longus. Folia rigidiuscula, supra intense viridia, subtus viridi-cinerea, 16–25 cm. longa, 8–13 cm. lata, nervis subtus valde prominentibus, nervulis numerosis subrectus satis ramulosis. Paniculae late pyramidatae, 12–13 cm. longae, ramis divaricatis, satis ramulosis. Calyx cinereus, 1.5 mm. longus et latus. Petala albescentia, latae obovata, apice retusa, 0.5 mm. longa. Staminum filamenta flexuosa, 1.5 mm. longa; antherae anguste obovoideae, 0.6–0.7 mm. longae. (No. 2856.)

MICONIA MICRANTHA (sect. Cremanium); ramis obtuse tetragonis, junioribus petiolis paniculisque vix furfuraceo-puberulis; foliis magnis, longiuscule petiolatis, ovato-oblongis, obtusiuscule breviterque acuminatis, inferne satis attenuatis basi acutis vel acutiusculis, margine vix undulato-denticulatis, et brevissime remoteque setuloso-ciliatis, 5-nerviis, utrinque glaberrimis; floribus 5-meris, minutissimis, breviter pedicellatis; calyce glabro, globoso-urceolato, brevissime obtuseque, 5-dentato; antheris apice biporosis; stigmate peltato.

Rami robustiusculi, juniores petioli pedunculique purpurascentes. Petiolus satis gracilis, 2–5 cm. longus. Folia membranacea, supra intense viridia, 12–20 cm. longa, 5–9.5 cm. lata, nervis subtus valde prominentibus, nervulis numerosis leviter prominentibus. Paniculae late pyramidatae multiflorae, 8–12 cm. longae; rami divaricati, acutiusculi-tetragoni, valde ramulosi; pedicelli 1–2 mm. longi. Calyx flavo-viridis, vix 1 mm. longus et crassus. Petala flavescentia, obtuse quadrata; apice truncata vel subemarginata; 0.5 mm. longa et lata. Staminum filamenta flexuosa, 0.5 mm. longa; antherae obovoideae; 0.3 mm. longae. Stylus crassus, 1.5 mm. longus. (No. 2858.)

MICONIA PLUMIFERA Triana, var. BANGII. Rami superne satis compressi, ad nodos longe barbati, caeteris tenuiter stellato-puberuli et setis longissimis subfasciculatis basi incrassatis subsparse hirsuti. Folia longe acuminata, supra tenuiter bulbata non vel vix strigosa, subtus creberrime minuteque foveolata et tenuiter stellato-puberula. (No. 2283.)

Obs.—Dans les *Monographiae Phanerogamarum* 7: 891, ou j'ai d'ecrit le type de cette espèce comme ayant une pétiole long de 5 à 7 cm.; mais d'après mes notes, dans l'exemplaire récolté par Pearce, qui se trouve á l'herbier de Kew, la plus grande feuille a une pétiole long de 18 cm.

MICONIA CYANOCARPA Naud. var. PARVIFOLIA Petiolus 7–17 mm. longus. Folia supra dense hirtella, subtus densissime breviterque villosa, 5–9 cm. longa, 2.5–4 cm. lata. (No. 2259.)

TIBOUCHINA MEMBRANIFOLIA (sect. Dictanthera); ramis obscure tetragonis, densiuscule-longe, adpresseque setosis; foliis lanceolatus, longiuscule acuminatis, basi acutis vel interdum subrotundatis, margine obscure remoteque denticulatis et ciliatis, 5-nerviis nervis lateralibus inferne longiuscule coalitis, utrinque longiuscule sparse adpressique setosis; calyce glanduloso, setis brevibus adpressis sparse vestito, lobis triangularibus, acutis, tubo dimidio brevioribus; staminibus glabris, satis inaequalibus, majorum connectivo basi breviuscule producta.

Rami graciles, cinereo-virides paulo ramulosi. Petiolus gracilis densiuscule adpressique setosus, 7–13 mm. longus. Folia tenuiter membranacea, supra intense viridia, subtus satis pallidiora, in eodem jugo satis inaequalia; majora 8–13 cm. longa et 18 32 mm. lata, minora 3–7 cm. lata et 8–18 mm. lata. Paniculae pauciflorae, foliosae, subcongestae; 2–4 cm. longae. Calycis tubus viridis, anguste campanulatus, 4 mm. longus lobi erecti, 2 mm. longi. Petala longiuscule ciliata. Staminum filamenta 4 vel 6 mm. longa; antherae leviter arcuatae, 4 vel 5 mm. longae, connectivo infra loculos 1 vel 2 mm. longi producto. Stylus gracilis, 8–9 mm. longus. (No. 2857.)

CALYCOPHYSUM PEDUNCULATUM Kars. et Triana var. VILLOSUM Rami cirrhri pedunculi calycisque densiuscule et breviuscule villosi. Petiolus longiuscule denseque villoso-lanatus. Folia supra densiuscule breviterque pilosa vix hirtella, subtus cinereo-canescentia breviter denseque villoso-lanata. Flores (imperfecte evoluti) ut videtur paulo minores. (No. 2244.)

Two new Genera of Saxifragaceae.

By John K. Small.

(Plates 256, 257.)

In the course of a study of the genus *Saxifraga*, several species now referred to it appear to be erroneously so placed. Repeated attempts to retain them where they were originally placed, or to transfer them to related genera have proved fruitless, and I confidently propose the two new genera here to be described.

Dr. Torrey remarks on *Saxifraga Parryi*, in the Botany of the Mexican Boundary Survey and others elsewhere to the same effect, that it is "a remarkable species, with the calyx and habit of a small *Heuchera*, but it is decandrous and the ovary is wholly free as well as two-celled." I make this species the type of a new genus.

JEPSONIA.

Slender acaulescent slightly pubescent herbs, perennial by corms. Leaves (usually vernal) all basal, suboricular in outline, cordate, petioled, slightly lobed and toothed; scapes (usually autumnal) wiry, simple or branched above; flowers in terminal cymes or cymose panicles; calyx campanulate with a flat base, its edge five-toothed; petals five, inserted just below the sinuses of the calyx; stamens ten, inserted on the calyx tube below the petals; filaments subulate, the alternate ones longer and slightly surpassing the calyx; ovary two-celled, free from and partially filling the calyx, its carpels united to about the middle; placenta central; follicles united at the base, tipped by the straight slender styles which diverge at an angle of about ninety degrees; stigmas peltate; seeds irregular in outline, ribbed and crested, with a pinched and curved base; embyro minute, erect in one end of the endosperm.

Leaves sub-orbicular, broader than long; calyx-teeth shorter than the tube.
1. J. Parryi.

Leaves ovate-orbicular, longer than broad; calyx-teeth as long as the tube, or longer.
2. J. malvaefolia.

1. Jepsonia Parryi (Torr.).

Saxifraga Parryi Torr. Bot. Mex. Bound. Surv. 69. *pl. 25.* 1859.

Perennial by an ovoid fleshy corm, scapose, wiry, sparingly pubescent throughout. Leaves (appearing in the spring) all basal,

suborbicular in outline, 2–2.5 cm. in diameter, cleft into seven crenately toothed crenate lobes, cordate, slightly pubescent on both surfaces, on petioles about equalling the blade; scapes (appearing in late summer or fall) usually two or four together, rarely solitary, erect, 4–25 cm. tall, simple or branched above; flowers few in a terminal cyme or cymose panicle; calyx campanulate with a truncate base, 4–6 mm. high, marked with ten brown branching nerves, its five triangular obtuse teeth about one-half as long as the tube; petals white with brownish or purple nerves, elliptic-oblong or elliptic-lanceolate, sometimes nearly ovate, 4–6 mm. long, about as long as the calyx, obtuse; stamens ten, the alternate ones longer, inserted on the calyx-tube above the middle (below the petals); filaments slender, subulate; follicles 7–9 mm. long, united at the base, the body nearly included in the calyx, the slender tips surpassing the calyx and diverging at right angles; seeds small, dull-brown, 1 mm. long, irregularly oblong, provided with two ribs and two crests. (Plate 256, copied from Bot. Mex. Bound. Survey.)

Original locality, "Dry Hills near San Diego and San Luis Rey, California." Found later near San Diego (Orcutt, 1885); Ione, Amador County (Parry, 1887). Flowering in November and December.

2. JEPSONIA MALVAEFOLIA (Greene).

Saxifraga malvaefolia Greene, Bull. Torr. Club, 19: 121. 1882.

Original locality, "Santa Rosa Island." Found later on Santa Cruz Island.

These two remarkable plants form a very distinct and natural genus. They are strikingly different from any species of *Saxifraga* in habit and the flower affords good characters. The calyx is simply toothed instead of cleft or parted, the petals and stamens are inserted in the upper part of the calyx-tube and not down where the ovary and calyx meet. The ovary fills but a small part of the calyx-tube and its stigmas are peltate and conspicuous, opposed to the capitate and inconspicuous ones in *Saxifraga*, the seed with its pinched and twisted base, its ribs and crests, has no parallel in related genera.

SAXIFRAGOPSIS n. gen.

Low caulescent caespitose, sparingly glandular-pilose plants perennial by woody rootstocks. Stems straw-like, rather slender not fleshy, sparingly leafy; leaves alternate, membranous the blade articulated to the petiole and not decurrent;

petiole wiry, dilated into a scarious ribbed base; inflorescence consisting of a terminal thyrsoid-panicle, its cymules peduncled; subtended by small bracts; pedicels usually bearing several opposite or nearly opposite bractlets below the flowers; flowers white, rather crowded; calyx hemispheric, its tube ribbed, united to the ovary, its segments five, unequal in size and shape, reflexed; petals five, inserted just below the sinuses of the calyx tube, long-clawed, at length deflexed; stamens ten, converging; filaments inserted at the bases of the calyx segments, dilated below into two thin wings; anthers ovoid-sagitate or broadly-oblong-sagitate, four-angled especially when old; ovary very short when young, soon elongating, immersed in a red glandular disk; placenta central; follicles slender, the bodies united, the tips erect; seeds minute, smooth, somewhat curved.

1. SAXIFRAGOPSIS FRAGARIOIDES (Greene).

Saxifraga fragarioides Greene, Bull. Torr. Club, **8**: 121. 1881.

Rootstock horizontal, stout, woody, 1-15 cm. long, covered by the dilated, membranous bases of old petioles; stems somewhat scape-like, erect or ascending, 1-3 dm. high, strict or flexuous above, bearing several leaves which are smaller but otherwise similar to the lower ones; leaves thin, cuneate or cuneate-obovate, 1–5 cm. long, rounded and coarsely toothed at the apex entire below the middle, sparingly ciliate, dark green above, paler beneath, marked with several palmately radiating nerves, obtuse at the base, on slender petioles 2–3 cm. long, flowers greenish, 6 mm. broad, in dense panicled cymules whose branches are subtended by linear entire or toothed bracts; calyx hemispheric, its tube united to the overies, its segments longer than the tube or at length shorter, ovate, ciliate, obtuse, reflexed when dry; petals oblong-spatulate or spatulate, persistent, ⅓ longer than the sepals; at length reflexed; filaments filiform-subulate; follicles narrowly conic, 6–7 mm. high, red, united only ⅓ from base, the summits erect; seeds oblong or obvoid, .5 mm. long, smooth. (Plate 257.)

Original locality, "High mountains west of Mt. Shasta, California."

High altitudes in the mountains of Northern California and Southern Oregon; Cliffs overhanging Castle Lake, Siskyiou county, California and top of the Siskyiou Mountains near Waldo, Oregon.

Carex vulpinoidea Michx. and allied Species.

By E. P. Bicknell.

A careful study of *Carex vulpinoidea* Michx., continued from the field into the herbarium, has made it plain to me that this species, as accepted, is a composite one, embracing at least three or four distinct plants on our eastern seaboard alone. One of these plants is an old species, here revived—the *Carex setacea* of Dewey, which I am satisfied should never have been discredited; it will be recalled that it was endorsed by Dr. Torrey. The other two seem never to have been distinguished, and reference to all the citations in the published synonomy of *C. vulpinoidea* discovers no name applicable to either.

Carex vulpinoidea Michx.

Culm 1½°–2½° tall (1°–3°), sharp-angled, very scabrous on the angles above, or throughout, leafy. Leaves long and narrowly attenuate, mostly exceeding the culm, 1°–2° long, 1″–2″, sometimes 2½″ wide, often somewhat appressed and crowded. Head at maturity greenish or dull brown, narrow, commonly 1½′–3′ long, 2″–3″ wide, the spikelets below either in contiguous or separated compound clusters or in short, appressed or ascending densely-flowered branches which often appear like oblong or linear spikes; larger spikelets narrowly oblong, the smaller subglobose. Small forms of the plant show the spikes aggregated into linear heads only 1½′–2′ long; in more attenuate forms the heads may be much interrupted and elongated, even slender and inclined, reaching a length of six inches, the lower branches an inch or more distant on the rachis. Occasionally in stout forms the head is much congested throughout and 4″–6″ wide; rarely it is looser and bears at the base closely compound ascending branches an inch in length. All the clusters of the head are subtended by setaceous, often flexuous bracts, the lowermost usually well-developed and elongated, even 8′ long. Perigynia very small, numerous, loosely spreading, the conspicuous points often somewhat recurved, at maturity greenish or pale brown, sometimes yellowish-brown, membranous, flattish, mostly distinctly few-n·rved on the outer face, frequently nerveless on inner face, ovate, often from a dilated or sub-cordate base, acuminate into a mostly slender, smooth to serrulate-hispid, sharply-toothed beak which usually equals or nearly equals the body of the perigynium; body of perigynium ½″–¾″ long and wide, more or less corky in the margins basally or at the sides. Achene broadly ovate-oblong, small, ½″ or less long. Scales small, whitish with a green keel, becoming pale

dull brown or sometimes yellowish-brown, little noticeable in the spikelet excepting their awns which, though not usually conspicuous, are evident and, with their spreading points of the perigynia, give the heads a sharply roughened appearance.

In low grounds and meadows, and along ditches, often growing in dense tufts. Canada to Florida and Texas, west at least to Minnesota and Kansas.

CAREX XANTHOCARPA n. sp.

Culm longer and often stouter than in *C. vulpinoidea*, 1½°–4° tall (1°–5°), much exceeding the leaves, scabrous on the angles above, very smooth and bluntly triangular or even subterete below. Leaves fewer and less crowded and appressed than in *vulpinoidea*, mostly under 1° long, rarely 1½°, 1½″–3″ wide. Head early yellowish or tawny, narrowly oblong, sometimes ovoid, mostly dense and uninterrupted, ¾′–2¼′ long, 3″–6″ wide, the spikes closely glomerate-subcompound throughout, or the lowermost more distinctly compound and looser, but not separated, forming ovoid, somewhat spreading clusters. Bracts mostly short and inconspicuous, the lowermost not often noticeably developed. Spikes plump, ovoid, densely many-flowered, the perigynia ascending, often slightly incurved, finally somewhat spreading, becoming bright yellow, markedly plano-convex and narrowly sharp edged, mostly ovate-elliptic from a cuneate pointed base, or sub-rhomboidal (those low in the spikes sometimes with a broader, more abrupt base), nearly beakless, or graduated into a short, very rough-margined, minutely two-toothed beak. Walls of the perigynium thickish and subcoriaceous, but not corky-thickened in the margins, either nerveless or obscurely few-nerved on the somewhat turgid outer face, often with a median ridge on the flat inner face; body of perigynium about twice as large as in *vulpinoidea*, 1″ or more long, 1″ or less wide. Achene broadly oblong, about ¾″ long. Scales longer than in *vulpinoidea*, but shorter awned, early becoming bright tawny or yellowish-brown and very noticeable in the spikes.

Scarcely tufted, growing in low fields or in open levels on higher ground.

In the cover of *C. vulpinoidea* in the Columbia Herbarium, I find specimens as follows:

Cambridge, Mass., 1845, E. Tuckerman, Jun.

Ohio, Sullivant.

The plant is common at New York and is unmistakable when once it is understood. Not infrequently it is found growing with *C. vulpinoidea*, from which it is clearly distinct.

CAREX XANTHOCARPA ANNECTENS n. var.

Lower and more slender than *C. xanthocarpa*, 1½°–3° tall; culms trigonous, scabrous above, smooth and sometimes subterete below, exceeding the leaves. Leaves mostly 6′–1° long, often very narrow, 1″–2″ wide. Head short, ¾′–1½′ long, 3″–4″ wide, green, varying to dull yellowish or greenish-tawny, the spikes noticeably bracteate, the lowest bract frequently exceeding the head. Spikes globose to ovoid-oblong, mostly distinct and loosely aggregated below the apex of the head, or the lowest, or lower two or three, slightly separated, either all simple and distinct or the lower subglomerate with smaller spikelets at their bases. In small forms the head may consist of only 6–8 globose more or less distinct spikes. Spikes relatively few-flowered, the perigynia finally loosely spreading, mostly exceeded by the awns of the scales, which gives the head a somewhat bristly appearance. Perigynia dilated-ovate or suborbicular (rarely narrower) mostly from a broad base, narrowed or abruptly contracted to the short rough-margined beak, sometimes slightly corky in the edges, few-nerved in the middle of the outer face, often broader than long, the body 1″ or more broad, 1″ or less long. Achene broadly ovate-oblong or suborbicular, nearly truncate at base, ½″ or more wide.

About damp thickets in low grounds and in moist woods.

Common at New York. In the Columbia College Herbarium are specimens from Staten Island (Britton) and North Carolina (Curtis).

In the present state of our knowledge of it this is a very puzzling plant. It has an aspect of its own, which makes it easy to recognize in the field, so far as I have observed it, yet certain herbarium specimens suggest that it shades into reduced forms of *xanthocarpa*. I have seen no specimens which were not clearly separable from *C. vulpinoidea*, although the general appearance of the head is often closely similar. Smaller forms having heads of few simple spikes sometimes bear a singularly close resemblance to *C. Muhlenberghii enervis*.

The plant differs from *C. xanthocarpa* mainly in simpler, looser and more bracteate, greener heads, more loosely-flowered spikes with spreading perigynia, longer-awned, paler scales which appear more bristly in the spikes, broader and more greenish perigynium, broader achene. From *vulpinoidea* it differs in shorter leaves, longer culm, shorter and simpler heads, larger and broader perigynium, with much shorter and rougher beak, larger achene.

I suspect that a better knowledge of this plant will show that it is sufficiently individualized to stand as a species.

CAREX SETACEA Dewey.

Culm 1½°–4° tall, mostly exceeding the long leaves, trigonus, often with concave sides, sharply serrulate-scabrous on the angles above, smooth below. Leaves 1°–2° long, 1′–3′ wide. Head about 2′ long (1½′–2½′), 3″–5″ wide, silvery-green to chestnut brown, mostly narrow with much broken outlines, often with short ascending branches at the base. Spikelets mostly ovoid-oblong, those terminating the branches sometimes attenuate and loosely flowered at the base, simple and crowded above, becoming somewhat alternate and glomerate-clustered or compound below, the lowest cluster sometimes separated. Head throughout either setaceously short-bracteate, the lowest bract not more prominent than those above, or all the bracts short and inconspicuous. Spikelets rather densely flowered, chaffy, the scales conspicuous, nearly concealing the appressed to subspreading perigynia. Perigynia lanceolate, graduated from a truncate base into a narrow beak, and smooth and nerveless or nearly so (*setacea*), or elliptic-lanceolate to ovate, with less abrupt base and short beak and mostly somewhat wrinkled-nerved (*C. scabrior* Sartwell), 1¼″–1½″ long, ½″–¾″ wide, the edges of the beak strongly serrulate or subaculeolate hispid. Achene larger than in *vulpinoidea*.

As compared with *vulpinoidea* the perigynium is without corky-thickened margins, and is more evenly graduated into a much rougher beak; the scales are larger, giving a chaffy appearance to the spikes, and are silvery-hyaline (*scabrior*) or becoming chestnut (*setacea*), in contrast with the smaller greenish-white or yellowish-brown scales of *vulpinoidea*, and are mostly more acuminate into a more delicate awn; the lower bract of the head is never much elongated or foliaceous, and altogether the head has a distinctly different appearance. I feel assured that a close acquaintance with this plant in life and a full series of specimens would only serve to emphasize its distinctness from *C. vulpinoidea*.

The description of *Carex setacea* here given is drawn to include the *Carex scabrior* of Sartwell. A type specimen of the latter (Carices Americae Septentrionalis. H. P. Sartwell, M. D., No. 72) is in the Herbarium of Columbia College, and the plant is well figured among Boott's illustrations of *C. vulpinoidea* (Ill. *pl. 409*). With this guidance I have been able without any hesitation to refer to *scabrior* rather than to *setacea*, a specimen collected at New

York. While it would be ill advised to propose a revival of *C. scabrior* on the evidence at command, attention may well be drawn to the very probable distinctness of the two plants.

Two Californian Saxifrages.

SAXIFRAGA FALLAX.

Perennial, fibrous-rooted, propagating by abundant subterranean short rhizomatous offsets; stem scapiform, 8–12 inches high, loosely cymose-paniculate at summit, the whole minutely and sparsely glandular-hispidulous, but with no villous hairs; leaves thin, ovate or oval, subcordate, or truncate at base, saliently toothed or only repand; calyx very deeply cleft, the segments reflexed; petals white, obovate-oblong, obtuse, emarginate; filaments very short; anthers green; mature carpels divergent almost from the base.

A northeast Californian and subalpine ally of the widely distributed *S. Californica*, differing from that in its short subterranean offsets, its emarginate petals and almost completely divergent carpels. I have it only from Lassen's Peak, where it was collected by Mrs. Austin long since, and from above Donner Lake, where I obtained it last summer.

SAXIFRAGA APRICA. *S. umbellulata* Greene, Eryth. 1: 222. The name first assigned to this small, but common and well marked species of sunny exposures near the crest of the Sierra, must yield to the much earlier *S. umbellulata* of Hook. f. & Thoms.

EDW. L. GREENE.

Proceedings of the Club.

ANNUAL MEETING, TUESDAY EVENING, JANUARY 14TH, 1896.

The President occupied the chair and there were 39 persons present.

The following were elected active members: Miss Mary Edgar, Mr. S. Sidney Smith, Mrs. S. Sidney Smith, Miss Mary Appleton, Miss Mary Farley, Miss Laura H. Knupfer, Mr. C. L. Allen, Mr. B. A. Gilbert, Mr. Per Axel Rydberg, Mr. Oliver A. Farwell.

The Finance Committee reported through the Secretary that no business had been before them for transaction during the year.

The Committee on Admissions reported that 41 nominations had been referred to them during the year and all had been reported favorably.

The Instruction Committee reported upon the classes in Anatomy and Morphology, conducted by Dr. Jelliffe during the past summer.

The Herbarium Committee reported a great improvement effected in the condition of the herbarium, as well as an increase in its size during the year.

An interesting general report was made by the Field Committee.

Upon the nomination of the Secretary, Miss Southworth (now Mrs. V. N. Spaulding) was elected a corresponding member.

A communication was read from the Pharmaceutical Era, offering to print abstracts of the proceedings of the Club if the Secretary would furnish the same. The proposition was unanimously approved.

The Treasurer reported the most prosperous year in the Club's history, the total receipts having been $1,885.55, and a balance on hand of $35.02. The Buchanan fund, with accrued interest, now amounts to $493.18.

The Recording Secretary reported the most prosperous year in the history of the Club, the active membership being 191; total membership 335, a net gain of 15 for the year. The average attendance had been 41, number of important scientific papers 21, of which 15 had been published.

The Corresponding Secretary reported having attended to all the general correspondence of the Club during the year.

The Editor reported the publication of 522 pages of BULLETIN and 85 pages of MEMOIRS, with a large number of illustrations.

Under election of officers, Mr. Le Brun was unanimously instructed to cast an affirmative ballot for the reëlection of all the officers of the preceding year, with the exception of Dr. Wheelock to succeed Miss Southworth (removed to Michigan) as Librarian, and Miss Ingersoll to succeed Miss Rogers as Curator, Miss Rogers desiring to be relieved. This action having been taken, the following officers were declared elected for the ensuing year:

OFFICERS FOR 1896.

President, Hon. Addison Brown; Vice-Presidents, T. F. Allen, M. D., L. H. Lighthipe; Recording Secretary, Henry H. Rusby, M. D., College of Pharmacy, New York City; Corresponding Secretary, John K. Small, Columbia College, New York City; Treasurer, Henry Ogden, 11 Pine street, New York City; Editor, N. L. Britton, Ph. D., Columbia College, New York City; Associate Editors, Emily L. Gregory, Ph. D., Arthur Hollick, Ph. B., Anna Murray Vail, Byron D. Halsted, Sc. D., A. A. Heller; Curator, Miss Helen Ingersoll; Librarian, Wm. E. Wheelock, M. D.

The announced paper of the evening on "The Anatomy of the Leaf of *Solidago pauciflosculosa*," by Miss Alice M. Isaacs and Miss Marian Satterlee, was then read by Miss Isaacs. The paper was illustrated by colored charts and specimens, and was discussed by the President, Dr. Gregory, Dr. Britton, Prof. Burgess and others. It will be printed in a subsequent issue of the BULLETIN.

Dr. Rusby remarked on cases of poisoning of horses, apparently by fungi growing upon golden rods.

Among the visitors present were Dr. D. Morris, the assistant director of the Royal Gardens at Kew, and Mr. E. P. Sheldon, of the University of Minnesota, both of whom, in response to invitations, favored the Club with interesting remarks.

Mrs. Britton exhibited a copy of the recent work by Prof. Douglas H. Campbell on Ferns and Mosses, and spoke in praise of the book.

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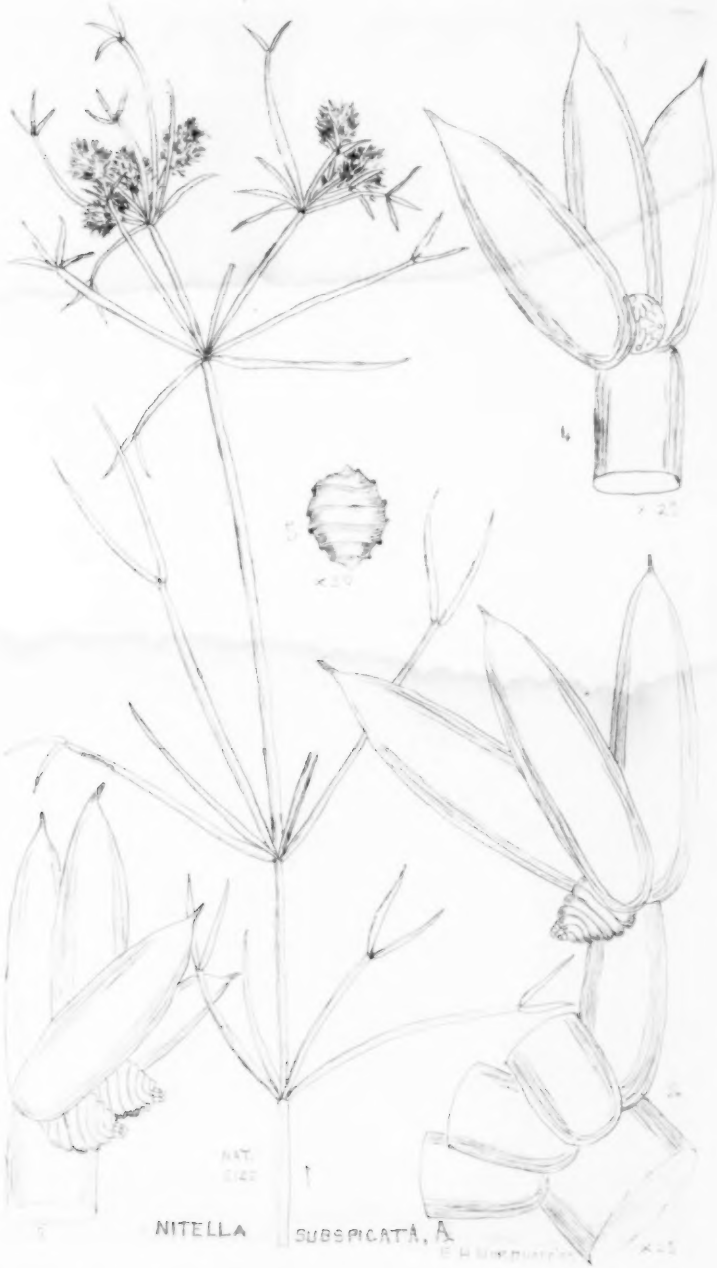

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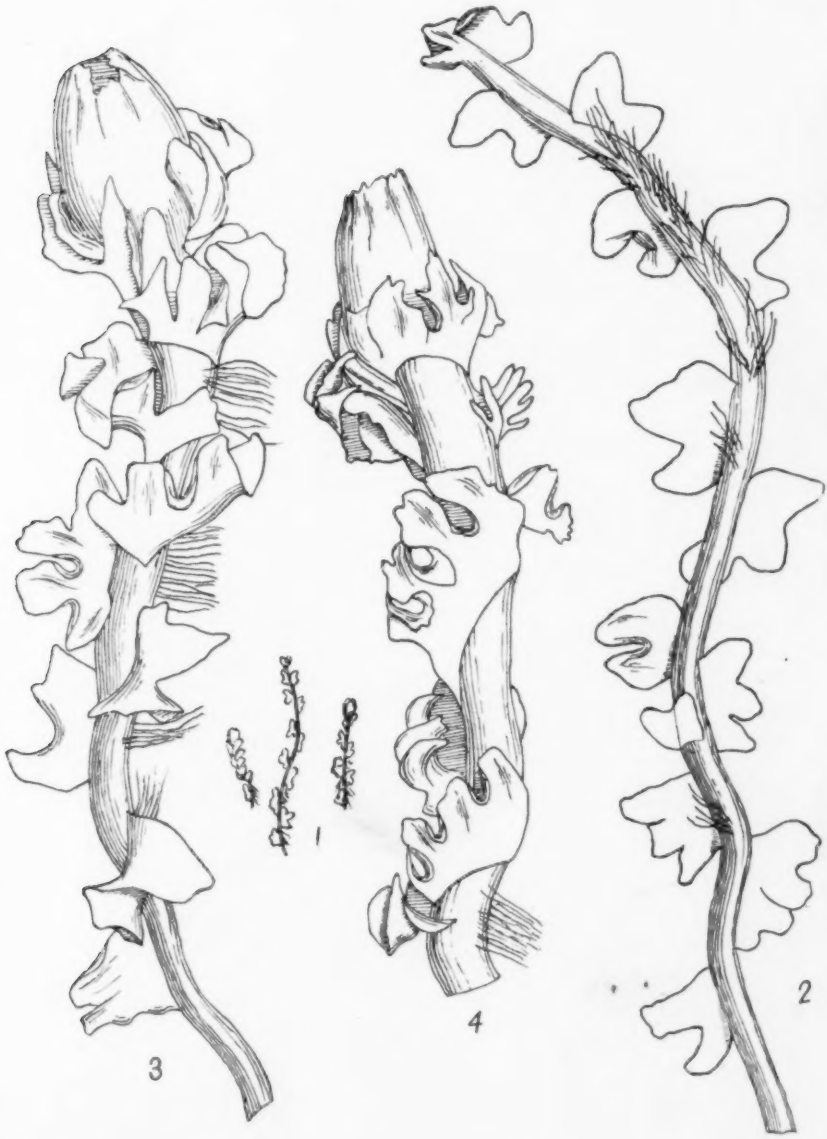

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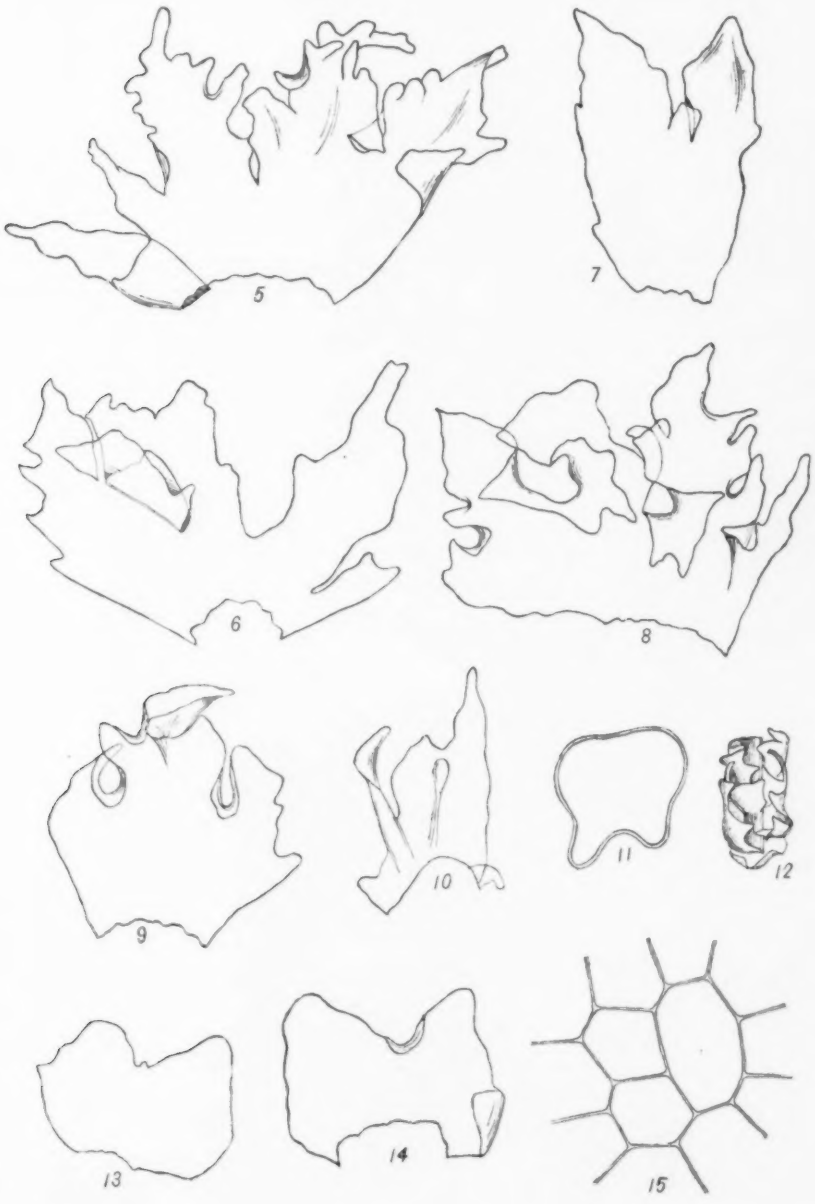

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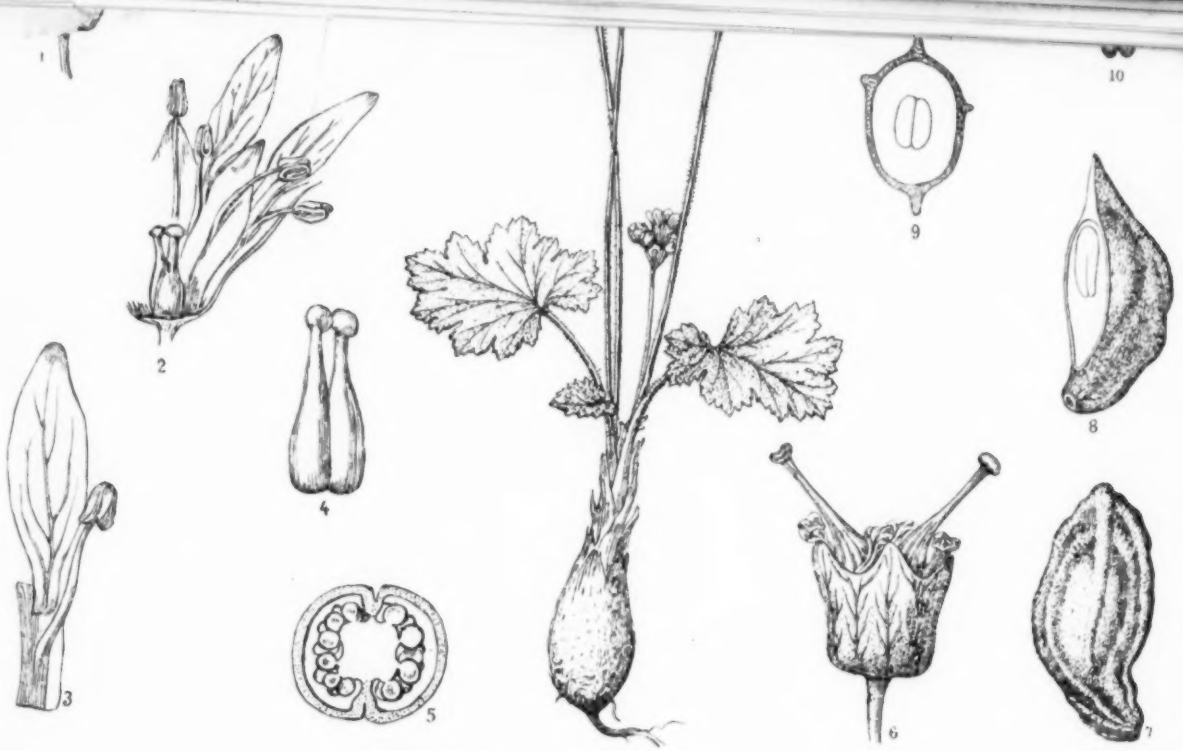

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